THE GENUS *NEOCHRYSIS* IN AMERICA NORTH OF MEXICO (HYMENOPTERA: CHRYSIDIDAE)

By R. M. Bohart[1]

The genus *Neochrysis* Linsenmaier has usually been included under *Chrysis* but this seems to be a purely artificial arrangement. Only one misidentified species has been recorded from our area, but four additional ones are now known to occur in Florida, Texas, Arizona and occasionally somewhat farther north. The genus is obviously Neotropical with an abundance of species in Central and South America. The reported hosts are wasps of the sphecine genus *Podium* and the eumenine genus *Pachodynerus*.

Institutional collections indicated by symbols are: U. S. National Museum (USNM), American Museum of Natural History (AMNH), British Museum of Natural History (BM), Hungarian Natural History Museum (BUDAPEST), Zoological Institute of Lund University (LUND), Museum of Comparative Zoology (MCZ), University of Kansas (KU), University of California at Berkeley (CIS) and at Davis (UCD).

Genus *Neochrysis* Linsenmaier

The genus was partially defined by Linsenmaier (1959, Mitt. Schweiz. Ent. Ges. 32:73). He included three subgenera, *Neochrysis s.s.*, *Ipsiura* Linsenmaier and *Pleurocera* Guérin (a homonym herein renamed *Pleurochrysis*). The first two of these, along with a new subgenus, *Exochrysis*, have representatives in the United States.

The most obvious generic character of *Neochrysis* lies in the shape of tergite I. It is broad with sharply rounded anterior corners which in normal position nearly touch the metathoracic teeth. Also, the radial (apical) cell of the forewing is broadly open instead of nearly closed as in *Chrysis*. The genitalia are especially distinctive, being very long and thin, the gonostyle simple, the digitus irregular and somewhat clavate. The eighth sternite of the male is unusually large, shovel-shaped, and often protrudes in dried specimens so as to resemble an ovipositor. In addition the basal vein of the forewing is interstitial with the first crossvein or nearly so, tergite III terminates in four to six teeth or lobes, the malar space is short to very short, the parapsides are generally faint, the scapal basin is hardly ever broader in front view than a compound eye, and the tergites usually have dark cross bands. Insofar as known, *Neochrysis* occurs only in the New World.

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KEY TO THE SUBGENERA OF *Neochrysis* AND THE SPECIES KNOWN TO OCCUR IN AMERICA NORTH OF MEXICO

1. Pronotum rather sharply edged but without a complete carina 2
   Pronotum with a carinate lateral margin (subgenus *Ipsiura*) 4
2. Tergite III with six distal teeth or angles; scapal basin limited above by a simple, sharp transverse carina; male flagellomeres greatly produced rib-like. (one species, *viridis* Guérin from Chile) ..... subgenus *Pleurochrysis* Bohart
   Tergite III with four distal teeth; scapal basin not limited above or with a carina having superior branches; male flagellomeres somewhat flattened toward middle of antenna but not produced 3
3. Pit row practically absent, not distinguished by a sharp groove nor a transverse swelling (subgenus *Neochrysis*), neither postscutellum nor propodeum with median projections ..... *montezuma* Cameron
   Pit row definite, mostly hidden in a deep transverse groove preceded by a swelling (subgenus *Exochrysis*); propodeum with a sharp median projection above .. *panamensis* Cameron
4. Tergite III with a prominent transverse roll or bulge followed by a plainly visible row of elongate rectangular pits, laterally with a large whitish spot ..... *neolateralis* Bohart
   Tergite III with a low transverse convexity before a somewhat hidden row of small pits 5
5. Tergite III with a laterobasal white spot ... *genbergi* Dahlbom
   Tergite III all greenish blue ..... *pilifrons* Cameron

Subgenus (*Neochrysis*) Linsenmaier

Neochrysis Linsenmaier, 1959. Mitt. Schweizerischen Ent. Ges. 32: 74. Type by orig. desig: *Chrysis punctatissima* Spinola 1840 (nec. Villers, 1789) = *carina* Brullé, 1846.

The subgenus *Neochrysis* has tergite III quadridentate, the pit row indefinite or entirely absent; and the pronotum rather sharply edged but not carinate. Some of the other species in this subgenus in addition to *carina* Brullé are *glabriceps* Ducke, *lecontei* Ducke, *paraensis* Ducke, *inseriata* Mocsáry, and *montezuma* Cameron. The following is the only species of *Neochrysis ss.* so far reported in the United States.

Neochrysis (*Neochrysis*) *montezuma* (Cameron)

Chrysis montezuma Cameron, 1888. Biol. Centrali-Amer. I., Hymen., p. 463. Holotype female, Valladolid, Yucatan (BM).

This species is close to *carina* Brullé, the female holotype of which I have seen in the Natural History Museum in Paris. In *montezuma* there is no smooth ridge on the postscutellum, no frontal carinae, the propodeal tooth is less slender, there are no special hairs on male flagellomeres I—II, and the mid notch of tergite III is deeper and narrower. Also, the cuspis is more sharply pointed, and the digitus is stouter.

In addition to the type and several specimens from Mexico (Chiapas, Nuevo Leon, Jalisco, Sinaloa), I have seen one female from Tucson, Arizona, August 12, 1955 (C. W. O'Brien, UCD).

Neochrysis (**Exochrysis**) Bohart, new subgenus
Type: *Chrysis panamensis* Cameron

Diagnosis.—Pronotum somewhat sharp laterally but without a definite carina; mid ocellus enclosed by an inverted, heart-shaped carina; anterior pronotal slope with neither a shiny area nor a definite pair of pits; tergite III with four well formed distal teeth.

Neochrysis (*Exochrysis*) *panamensis* Cameron

Chrysis panamensis Cameron, 1888. Biol. Central-Amer., Hymen. I, p. 464. Holotype female, Chiriqui, Panama (BM).

Chrysis alabamensis Mocsáry, 1914, Ann. Mus. Nat. Hungarici 12: 49. Holotype female, Alabama (BUDAPEST). **New Synonymy.**

This species has the third tergite with a distinct row of pits of which the median pair are large, directed anteriorly, and deep. There is a noticeable swelling before the pit row, and the propodeum bears an upper median ridge-like tooth behind a zone of very coarse punctation on the postscutellum. Other distinctive features are the somewhat flattened flagellum in both sexes, but especially in the male, and the form of the digitus, which tapers rather evenly toward the slender apex.

I have seen specimens from Panama (*panamensis* type), Costa Rica, and Mexico (Colima, Chiapas), as well as three males and five females from eastern United States. The latter are from "Florida" (Mrs. A. T. Slosson, AMNH); DeFuniak Springs, Florida, 3 May (Acc. no. 5407, AMNH); Bradentown, Florida (USNM); Jacksonville, Florida (W. H. Ashmead, USNM); Atlanta, Georgia, 20 May 1940 (P. W. Fattig, USNM and UCD); and Stone

Mt., Georgia, 29 May 1936 (P. W. Fattig, USNM, homotype of *C. alabamensis* Mocsáry by K. V. Krombein).

The host of *panamensis* (as *alabamensis*) has been recorded as *Podium carolina* Rohwer by K. V. Krombein (1958. U. S. Dept. Agr. Monog. 2: 95).

Subgenus (*Ipsiura*) Linsenmaier

Ipsiura Linsenmaier, 1959. Mitt. Schweizerischen Ent. Ges. 32: 74. Type species: *Chrysis marginalis* Brullé. Orig. desig.

Essential characters of the subgenus are: the sharp, longitudinal lateral pronotal carina; the coarsely punctate anterior pronotal slope with special pits absent or obscure; a tendency toward reduction of the median longitudinal pronotal groove; the obtuse apicolateral corner of tergite II; the enclosure of the median ocellus by an inverted U-shaped carina from the scapal basin; and the frequent occurrence of a translucent or whitish laterobasal spot on tergite III. Typical *Ipsiura*, such as *marginalis* Brullé and *ellampoides* Ducke, have a projecting postscutellum, and tergite III has a deflected quadridentate apical margin as well as a whitish laterobasal spot. In the group represented by *leucochila* Mocsáry and *leucochiloides* Ducke the postscutellum is not projecting and tergite III is quadridentate and spotted but not deflected. Similar to these but hexadentate are *lateralis* Brullé, *leucobasis* Mocsáry, *cristata* Mocsáry, *albibasalis* Mocsáry, *longiventris* Ducke, *friesiana* Ducke, *anisitsii* Bischoff, *klugii* Dahlbom, *genbergi* Dahlbom, and *neolateralis* Bohart. In the same group but without a spotted third tergite is *pilifrons* Cameron.

Three species of *Ipsiura* have been found within our boundaries, one from Florida, one from southeastern Texas, and the other from the southern section of the country as far north as 38 degrees in Kansas, Illinois and Virginia.

Neochrysis (*Ipsiura*) *genbergi* (Dahlbom)

Chrysis genbergi Dahlbom, 1854. Hym. Europeae 2: 319. Holotype female, Brazil (LUND).

A female in the collection of the U. S. National Museum is labeled "Fla." It agrees closely with material in the Natural History Museum at Paris from Minas Gerais, Brazil, determined as *genbergi* by du Buysson. Except for the large white lateral spot on tergite III it is very similar to *pilifrons* Cameron. Minor points of difference are the slightly broader interocular area and the longer subantennal distance (1.2 times mid ocellus diameter instead of 0.8

times) in *genbergi*. It differs from *neolateralis*, which is also white-spotted, by the U-shaped rather than V-shaped carina enclosing the mid ocellus, and by the low and weakly defined swelling before the pit row.

Neochrysis (Ipsiura) neolateralis Bohart, n. sp.

Chrysis lateralis of authors, not Brullé.

Male.—Length 9 mm. Dark green with purplish areas on vertex and thorax, purplish bands across abdominal tergites, a large creamy spot along pit row from base of tergite III almost to outermost tooth; sternite II with a pair of large black submedian, subbasal spots; flagellomere I bluish above; wings lightly brown stained in cellular area. Scapal basin with fairly dense, somewhat appressed silvery hair, pale inconspicuous hair on rest of body. Punctation moderate to coarse, mostly moderate and close, sublaterally on tergite II about one-half diameter apart, fine in scapal basin, summit of postscutellum rough, area of tergite III beyond pit row mostly smooth. Head about as broad as long, least interocular distance about equal to length of scape; flagellomere I about 1.3 times length of II in inner view; subantennal space 1.0 times mid ocellus diameter, interantennal space 0.9 times and malar space 0.2 times; scapal basin without a definite cross carina but an inverted and somewhat U-shaped carina above it encloses mid ocellus; ocelli slightly lidded; fore femur with an angle beneath at distal two-thirds; mesopleuron with two distinct teeth and other irregularities; propodeal tooth blunt, hardly lobed beneath; tergite III with a strongly bulging roll before elongate pit row, followed by short, single-edged teeth, outermost one rounded, median notch not depressed nor shiny at base, lateral edge of tergite broadly and evenly bowed out; genitalia slender, aedeagus not drawn out at apex.

Female.—Essentially as in male. Angle of fore femur forming a short, sharp ridge.

Holotype male.—West Frankfort, Franklin Co., Illinois, 5 July 1963 (R. M. Bohart, UCD).

Paratypes.—10 males, 17 females. **Kansas:** Atchison Co. (R. H. Beamer, KU); Stockdale, Riley Co. (UCD); Bourbon Co. (R. H. Beamer, KU). **Arkansas:** Pyatt, Marion Co. (J. C. Downey, Univ. So. Illinois). **Illinois:** Crabtree Orchard Lake, Williamson Co. (J. C. Downey, UCD). **D. C.:** Washington (J. C. Bridwell, USNM). **Virginia:** Falls Church (N. Banks, MCZ). **Georgia:** Atlanta (P. W. Fattig, USNM); College Park (P. W. Fattig, USNM). **Texas:** "Texas" (UCD);

Brownwood, Brown Co. (M. A. Cazier, AMNH); Austin, Travis Co. (J. E. Gillaspy, AMNH); Somerset, Atascosa Co. (A. J. Adelson, CIS); Llano Co. (J. E. Gillaspy (AMNH, CIS, UCD); Nueces River, Uvalde Co. (J. Bequaert, MCZ). Also in Mexico and Central America as follows: **Sinaloa:** Mazatlán (R. and K. Dreisbach, Dreisbach collection); Elota (F. Parker, L. Stange, UCD). **Nayarit:** Navarrete (C. and P. Vaurie, AMNH), **Jalisco:** Plan de Barrancas (F. Parker, L. Stange, UCD). **Morelos:** Temisco (F. Parker, L. Stange, UCD) **Puebla:** Petlalcingo (F. Parker, L. Stange, UCD). **El Salvador:** Quezaltepeque (M. Irwin, D. Cavagnero, UCD).

Neochrysis (*Ipsiura*) *pilifrons* (Cameron)

Chrysis pilifrons Cameron, 1888. Biol. Centrali-Amer. I, Hymen., p. 465. Holotype male, Panama (BM).

Chrysis stenops Mocsáry, 1889. Monog. Chrysidarum, p. 571. Lectotype female, Tampico, Mexico (Geneva) Present desig.

This species has tergite III unspotted, the pit row greatly sunken and slit-like, and the frons at the narrowest point less than the length of the scape. In addition, there is a short carina from the unlidded lateral ocellus obliquely forward to the compound eye. The outermost tooth of tergite II is not so sharp as the others. This is especially true in the type of *stenops*.

In addition to the type specimens listed above, I have seen a female lectoparatype at the Natural History Museum in Vienna from Orizaba, Mexico, and a female at the U. S. National Museum from Brownsville, Texas, June.

Subgenus *Pleurochrysis* Bohart, new name

Pleurocera Guérin, 1842. Rev. Zool (Soc. Cuv.) 5: 149. Type species by monotypy: *P. viridis* Guérin, 1842, Chile. Preoccupied by *Pleurocera* Rafinesque, 1818. Amer. Mon. Mag. 3(5): 355 (Mollusca).

The subgenus is known only from the type species, *P. viridis* Guérin, which occurs in Chile. Tergite III has six teeth but no pale markings, the scapal basin is limited above by a sharp transverse carina, the pronotum is not carinate laterally, and the postscutellum has a sharp median longitudinal ridge. However, the most striking feature of the genus is the foliaceous antenna of the male in which most of the flagellomeres are flattened and produced outward somewhat rib-like. The host is reported to be *Pachodynerus gayi* (Spinola) by H. Janvier (1933, Ann. Sci. Nat. Zool, Paris (ser. 10) 16: 292, as "*Odynerus gayi*").